



Albert Heijn implements voice-picking in distribution centres



“With the new voice-picking solution from Motorola’s Enterprise Mobility Business and Voxware at our distribution centres, we realised a five to ten per cent productivity increase in a few weeks, depending on the product range,” said Boudewijn Canrinus, who is responsible for product innovation at Albert Heijn. “This is even more impressive when you consider that we had already achieved high labour productivity and a low picking error rate compared to competitors with our existing Motorola scanning solution.”

The company: Albert Heijn

Albert Heijn is a Dutch supermarket chain owned by the listed international group Ahold. It has head offices in Zaandam, The Netherlands. Albert Heijn employs a workforce of over 70,000 employees and realised a 6.5 billion euro turnover in 2006. The company runs almost 750 supermarkets that serve over 10 million customers every week. Its six Distribution Centres (DCs) are responsible for stocking all of its stores.

The challenge: Maximising productivity and minimising errors

Albert Heijn is an innovative supermarket chain with a highly-responsive supply chain. It maintains its competitive edge with advanced information and communications technologies, and business process optimisation. As a result, the company already had high productivity and a low picking error rate at its four regional and two national DCs. But, in order to achieve this, the picking team needs to constantly refer to their mobile computers both to receive information and to confirm their picks. This takes their eyes and their hands away from the picking locations, limiting the speed at which they can work and allowing room for error to occur.

After following the developments in voice picking for several years, Albert Heijn believed that a solution from Motorola partners VoxWare and Van Boxel could keep them remain at the forefront of retail innovation. However, Albert Heijn had to be sure that the voice-picking solution would enable a productivity increase that would justify the company’s investment. In order to achieve this, Albert Heijn needed to reach over 99.5 per cent picking accuracy from a mobile computer operating on an open architecture.

Customer profile



Company
Albert Heijn

Location
Zaandam, the Netherlands

Industry
Food retail

Motorola products

- 1,500 MC3000
- 400 MC9000

Applications

- Voxware voice-picking

Benefits

- Five to ten per cent increase in already-high productivity levels
- Error reduction to near-100% picking accuracy
- Improved safety
- Improved visibility with real time track and trace of products through the warehouse management system
- Ease of use for operatives with different native languages



“We opted for the voice-picking solution from Motorola and Voxware because it is a completely ‘open’ system with high accuracy and a better price/performance ratio than other solutions.”

The solution: Open voice-picking solution by Motorola and Voxware

Albert Heijn carried out a proof-of-concept trial for a voice-operated mobile computing solution from VoxWare and implemented by Vanboxtel in 2006. The system relies on MC3000 and MC9000 mobile computers from Motorola. These ruggedised mobile computers for mission-critical enterprise applications feature multi-mode wireless connectivity and Push-to-Talk Walkie-Talkie capability for anytime, anywhere voice and data connectivity.

“Our policy is to select only solutions based on a standardised architecture, which can be integrated as openly as possible with other business systems,” said Boudewijn Canrinus, who is responsible for process innovation at Albert Heijn’s DCs. “Until recently, the investment in voice picking was too high for us because the software solutions on offer by most vendors were closed. If, like many of our competitors, you switch from paper picking lists to a voice solution, you can realise a greater increase in productivity. However, as we had already achieved a high level of picking productivity at our distribution centres by moving to a mobile-computer based solution, the gains, though valuable, didn’t previously make a business case that justified further investment. The solution from Motorola and Voxware changed all that. The open

solution is priced much more attractively and, since part of our hardware was due to be replaced, the broadly deployable Motorola MC3000 and MC9000 mobile computers yielded an advantage of scale.”

The mobile computers are connected wirelessly to the host, which runs Albert Heijn’s Warehouse Management System (WMS). The WMS solution, IMI-Warehouse, builds pick lists based on a multi-store operation. This means that any one order picker may be picking, for example, for four different stores on their route. As the pickers move through the warehouse the WMS sends instructions to the Motorola mobile computers about the order units, their locations and their destination load carrier. The Motorola mobile computers run a text-to-speech programme which converts the data from the WMS into audible instructions. By creating these as recorded ‘voice prompts’, the solution can work in the languages of Albert Heijn’s choice, enabling the company to work with employees who aren’t native language speakers. The operative then speaks a ‘trained text’ command to confirm their completion of each pick to enable them to move on.

Although the pickers each have their own headsets for hygiene reasons, the Motorola mobile computers are rotated between staff on shifts. At the start of a shift, each operator will collect a freshly-charged battery and a mobile computer, which, when they

log on to it, will register a language preference before the latest dialogue is downloaded from the host computer.

“When our mobile computers provided written instructions, we hadn’t needed multiple languages for our picking operatives,” said Canrinus. “Before, everyone was able to cope with the instructions in English but the semantics are so important in voice-picking that we have to be careful to prevent errors. Fortunately, developing an additional language version proved less difficult than we feared and now means picking is simpler for many of our staff.”

The pilot, which was set-up at the fresh produce department of the Zwolle distribution centre, proved so successful that this facility went completely live in 2007. The system had an eight-week roll-out plan to the centres at Pijnacker, Tilburg and Zaandam in the same year. With some 4000 to 5000 users, Albert Heijn will have one of the largest voice-picking installations in the Benelux.

The results: Maximum productivity and highest reliability

As a result of the voice-picking implementation, operatives no longer pause to check information on their mobile computers. Cutting the process of switching attention between the computers and the task in hand has delivered numerous benefits.

Firstly, Albert Heijn managed to increase productivity at its distribution centres. The total improvement varies depending on the type of items being picked between five and ten per cent. Furthermore, the system reliability has risen to nearly one hundred per cent.

“As the five to ten per cent increase demonstrates, we are now approaching the maximum productivity of our distribution centre personnel,” explained Canrinus. “In order picking, you have to deal with people’s physical limitations and technical speed constraints depending on the product range. We already had a low error rate of 0.3 per cent, so there was little to gain there but, spread across the whole business, this represents a notable saving. Because we work with an open standards-based solution, every component can be replaced if necessary and the total cost of ownership is considerably lower than for proprietary systems.”

Albert Heijn saw additional benefits for its employees with safety levels improving in the warehouse. Because operatives have their eyes on what they are doing one hundred per cent of the time, there are lower risks for them to have accidents. There have been benefits too at management level as the solution’s real-time interface with the WMS gives greater granularity for visibility into the picking process, enabling more accurate product tracking.

About Motorola

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